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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,183	10/04/2001	Yasuyuki Kimura	01165.0836	2577

7590

10/05/2004

Finnegan Henderson Farabow
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Washington, DC 20005-3315

EXAMINER

BEFUMO, JENNA LEIGH

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/031,183

Applicant(s)

KIMURA ET AL.

Examiner

Jenna-Leigh Befumo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 4 and 5 objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 102/103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 – 3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kasai et al. (5,217,796).

Kasai et al. is drawn to a treatment for woven fabrics made from inorganic fibers including fabrics which are used as printed circuit boards (column 1, lines 10 – 15). Kasai et al. discloses treating a woven fabric by a process which impinges jets of pressurized water onto the surface of the fabric thereby opening the warp and weft yarns (column 2, lines 60 – 69). The pressurized jets spread apart the individual filaments in the yarn and reduces the gaps between

the warp and weft yarns to create a smoother surface (column 4, lines 1 – 8). Kasai et al. discloses that the woven material is made from yarns composed of several hundred monofilaments each 5 – 9 microns in diameter and are made from glass (column 3, lines 3 – 7). Finally, one of the woven fabrics used in the examples is a plain woven fabric with a density of 59 warp/25mm and 57 weft/25mm, which would have a Ct/Cy of 1.0 (column 5, lines 40 – 45).

Although Kasai et al. does not explicitly teach the limitations yarn width and number of filaments to calculate the flatness of the fabric, it is reasonable to presume that said fabric taught by Kasai et al. would meet the limitation of equation 1-a. Support for said presumption is found in the use of similar materials (i.e. glass filaments with similar deniers, yarns with low twist, and woven fabrics with similar weave densities) and in the similar production steps (i.e. treating the woven fabric with pressurized water jets to open and spread the filaments in the yarns to remove the gaps between the yarns) used to produce the printed circuit board. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594.

In the alternative, it would have been obvious to one of ordinary skill in the art to optimize the yarn width and number of filaments in the warp and weft yarns to meet the limitation in equation 1-a. One of ordinary skill in the art would be motivated to produce a fabric with very small gaps or opening between the fibers and a smooth even thickness throughout the fabric, since Kasai et al. discloses that the fabric should be as smooth as possible and that the yarns should spread out to fill the openings between the fibers. Further, one of ordinary skill in the art would also be motivated to produce a fabric with yarns as flat as possible so that the overall thickness of the fabric is kept as small as possible since the material is being used in printed circuits boards. Note *In re Best*, 195 USPQ 433, footnote 4 (CCPA 1977) as to

the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102.

5. Claims 1 – 3 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 11-061596 (English Translation).

JP 11-061596 discloses a woven glass cloth made with flattened glass yarns as shown in the figure (abstract). The flat yarns produces a fabric with excellent smoothness and allows uniform resin distribution (abstract). The woven glass fabrics can be used in printed wiring boards (field of invention). The yarns are flattened by applying pressure to the fabric via air or water jets (paragraph 13). The examples disclose using woven fabrics with warp densities ranging from 40 to 68 warp/25mm and weft densities ranging from 32 to 57 wefts/25mm (Table 1). The yarns have widths which range from 309 to 647 microns (Table 1). Further, the fabrics Ct/Cy ranges from 1.0 to 1.4.

Although JP 11-061596 does not explicitly teach the limitations filament diameter and number of filaments to calculate the flatness of the fabric, it is reasonable to presume that said fabric taught by JP 11-061596 would meet the limitation of equation 1-a. Support for said presumption is found in the use of similar materials (i.e. glass filaments with similar deniers, yarns with low twist, and woven fabrics with similar weave densities) and in the similar production steps (i.e. treating the woven fabric with pressurized water jets to open and spread the filaments in the yarns to produce a fabric with excellent smoothness) used to produce the printed circuit board. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594.

In the alternative, it would have been obvious to one of ordinary skill in the art to optimize the filament diameter and number of filaments in the warp and weft yarns to meet the limitation in equation 1-a. One of ordinary skill in the art would be motivated to produce a fabric with very small gaps or opening between the fibers and a smooth even thickness throughout the fabric, since JP 11-061596 discloses that the fabric should be as smooth as possible and that the fabric should have a uniform thickness. Further, one of ordinary skill in the art would also be motivated to use filaments and yarns which produce a fabric as thin as possible so that the overall thickness of the fabric is kept as small as possible since the material is being used in printed circuits boards. Note *In re Best*, 195 USPQ 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102.

Conclusion

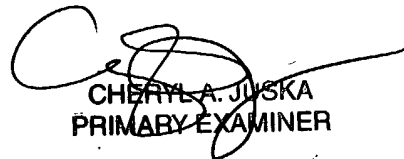
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (571) 272-1472. The examiner can normally be reached on Monday - Friday (8:00 - 5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jenna-Leigh Befumo
September 29, 2004



CHERYL A. JUSKA
PRIMARY EXAMINER